The Effect of Organizational Challenges on Staff Productivity of Maintenance and Repair Unit of Exploitation of Oil and Gas Company in Gachsaran

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ABSTRACT

The main purpose of this study in investigation the relationship between organizational challenges components (Structural problems, problems of manpower, equipment, obstacles, problems) and the dimension of the labor force (efficiency, effectiveness and quality of service) of maintenance of oil and gas operating company in Gachsaran. After distributing the questionnaires of organizational challenges and questionnaires of obstacles, problems) and to the relationship between the sample, the gathering data, statistical analysis have been done by computer. The results show that there is a significant and inverse relationship between each of organizational components and each dimension of manpower productivity.

INTRODUCTION

Today, all countries are trying to achieve improvements in the field of productivity. This means that they have this ability to achieve greater national productions by consuming fewer resources because there is a positive correlation between productivity index and per capita income of each country. Making an effort for improving the productivity is an effort of better lives in the society. Productivity improvement in organizations makes the human resources think better, create, innovate and find a systematic approach and will have thinking that instead of targeting present and past, create the future. [6].

The main mission of net organizations is performing series of operation in order maintain equipments in an acceptable condition and to improve the technical skills of the labor force or to change the undesirable conditions into the acceptable one. Maintenance, repairs and production support in a production unit has a key importance. And the strengths and weaknesses of this section has a direct effective on productivity and profitability. [12].

The topic of maintenances and repairs (net) are becoming important in organizations. Synonymous with the growth, the productivity of maintenance and repairs unit as well as net productivity of labor are shown importantly [13].

Failure to discuss the importance of maintenances and repairs will initially cause to reduce the temporary. But in the long run would impose high costs, and even become irreversible. Major organizational challenges of maintenance and repair units in most Iranian companies which have a direct effect on their productivity can be classified into four groups including structural problems of organizations, manpower issues, equipment obstacles, outsourcing problems, [5].

Based on mentioned materials, the research purposes are presented as follow:
- Examining the relationship between structural problems and staff productivity components of oil and gas operating company in Gachsaran.
- Examine the relationship between human resource issues and staff productivity components of the maintenance and repair unit in oil and gas operating company in Gachsaran.
- Examining the relationship between equipment obstacle and staff productivity components of maintenance and repair unit in oil and gas operating company in Gachsaran.

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examining the relationship between outsourcing problems and staff productivity components of maintenance and repair unit of oil and gas operating company in Gachsaran.

Review of literature:
Appropriate organizational structure, efficient procedures, equipment and tools for healthy, balanced work space and the most important one the qualified and competent manpower are necessities that should be considered by managers to achieve more desirable productivity. [14].

Structural problems:
Two features of organizational structures in large state-owned enterprises which are lack of comply with the requirements of the new system and the lack of possible changes (in a short time) has led to become one of the major obstacles facing the developments in these organizations. To the extent that in some cases due to lack of changes in organizational structure, these systems are turned to simply a work surface and without result. [10].

According to the studies and investigations of management and organization scientists, there are various factors affecting the staff behaviors and their productivity. Organizational structures can be considered as one of them. The structures that have chosen for an organization by the management will be representative of the organization and its features. Selecting this kind of structure is related directly with the size of an organization as well as its number of staff and will affect their productivity. So this structure The structure must also be proportional to the position of related organization [9]

Human resources issues:
The role of human resources in the development of society, has the most important and is regarded as the most effective element of economic development, social and cultural. Manpower is the greatest and most valuable asset of one organization that has never been reflected in the balance sheet and statements of profit and loss firms. While the organization profitability is on the shoulder of man resource and the staff are taken into account as the backbone of success in an organization. Based on the importance of different factors like income, social statuses, job condition,… that are for individual will have a certain level of job satisfaction. In industrial units which do not pay special attention to repair and maintenance unit will cause:
* Most of the staff are not satisfied of continuing working in net department and go on working with spirit of low motivation.
* A significant number of professional staff in recent years separate from net departments. And a group of them are making effort to be separated from this department.
* People who have been transferred from repair and maintenance unit or even had settlement all agreed that their current situation is better than before.

Thus, regarding the fact that staff are in production process are personnel of production, maintenance and repair unit and on the other hand, considering the chart of changes and needing the expertise and human source costs of production, repair and maintenance department for achieving qualitative and quantitative purposes of production in one year the portion of job satisfaction in maintenance, repair department is higher than the portion of production section. It seems that the present situation and the loss of skilled and experienced personnel, is the alarm of future condition of organization and is considered as the main and priority challenges by people in charge of controlling the maintenance, repair unit.

Barriers equipment:
Lack of interaction of the supplier and utilization units: unfortunately in creating new product line sometimes politics is that the modern and up to date equipments have been used. That they should be consistent with culture of working, expertise of maintenance and repair and political statue of Iran among all countries, but, none of the effective variables can be seen in stability and efficiency of the system. [5].

The procedure is not suitable to supply spare and consumable items: In some companies, the organizational structure is such a time-consuming cycle that causes Costs associated with inventory control issue (orders, purchasing, warehousing, etc.) are abnormally elevated that the main reasons are cited:
* Lack of time determination for ordering to buy spare parts and supplies
* Lack of consistent of net personnel working with personnel working in ordering unit technically and operationally. [5]

Maintenance costs of spare parts and consumables: nowadays, most of factories have focused on reducing the inventory level. The importance of the issue is not based on high or low numbers but also their number is always annoying. In most of times the high or low numbers cannot be found but we wnt to be outnumbered. [3].

Outsourcing problems:
Nowadays, issues such as competitive pressures increase, business difficulties, limited resources, technological complexity and evolving specialized tasks, Environmental changes, uncertainty about the future,
cost overruns, excessive grow of some organizations (especially in public sector) as well as legal restriction will cause the organization to revise its management models and to achieve competitive advantage, and to bring a new strategy in today's business world. One of these strategies is focusing on core competencies and handing out many activities to resources outside the organization (outsourcing). [4]. Outsourcing problems of net department include:

*unfortunately, most contractors of maintenance and repair are not familiar with the net system. And in another words, they worked empirically and do not know the basic principles of working with net. On the other hand, amount of contract is the most important factor of winning terms in the tenders.

Regarding the equipments, systems and procedures in each company takes the personnel about six months after starting the contract to be familiar with different systems and equipments. Thus, depending on the time of contracting which is usually one year, some issues such as Issues like job guarantees, probability of not winning the next bidding and etc will cause contractor do a little investment in physical and human resources in the complex.

* Contractor winning bid usually set to bring the new company name to the complex if the previous contractor human source have been used. On the other hand stability of contractor management is the main origin of system weaknesses. Proven experience has proved that this will be more difficulties in the system than the previous period [5].

**Productivity:**

From the perspective of ILO, the productivity has been defined as the ratio of outputs to inputs among the capitals, labor and management [2]. Europe Productivity Agency (EPA) express the productivity as the efficient using of each of productive factor. [1].

Systematically, productivity has a more complex nature and is introduce in the whole system. From a systemic perspective, productivity is defined as the ratio of output to input of a system [14]. Labor productivity index of note include three components: effectiveness, efficiency, quality of service.

**Workforce Effectiveness:**

This component deals with measuring how effective planning and scheduling of labor resources. By which the added value can be made and production equipment will be continued. Effective planning and scheduling maintenance work in net process before attempting to extend the useful component of the work and effectiveness of the workforce is vital.

**Workforce efficiency:**

This component represents the real performance of net workforce in comparison with planning and operational standards. Component of net labor force depends on the skill level of individual employees. And the experiences, motivation issues have a direct effect on increasing the skill level. Implementing training of development of personal skills and technical improvements also contributed to this issue [7].

**The quality of workforce services:**

This component includes the real quality of working meaning the number of jobs back for each unit of net for repairmen. Back of job to net maybe due to making mistake in troubleshooting, risk of damaging any components of the machine during the repair process or due to poor quality of parts were used [8].

**Review of literature:**

Ricky Smith and Bruce Hawkins (2004) in a conclusion, about improving productivity of pure net says that net organizations can achieve high productivity through three ways: productivity through net workforce, productivity through processes and methods of net working and productivity through equipments and machineries that among them, productivity through skill and knowledge of personnel is the most effective factor.

Timothy C. Kystr (2006) in the research on the planning and scheduling the maintenance and repairs maintenance in net organization in Australia achieved the results that there is a significant and direct relation between variables of net staff patterning, net personnel performance, equipment operation, net warehouse, net training at level of productivity. It has been suggested that base on fundamental and logical planning, the productivity can be increased by using the five mentioned variables.

John Dee Campbell and Andrew Kennedy (2001) in a research called excellent net concluded that at least three features are required for achieving excellence and promotion in net productivity in one organization that includes the personnel performance, net process, net technology that any organization can integrate and coordinate all and make a good relation in a way that make the maximum productivity of net organization.

Asgari (2005) in his thesis titled the investigation effective factor on human resource productivity of Foolad Mobarake Company found that there is a significant relation between human resource productivity and training
components with correlation coefficient of 0.78, between job satisfaction and productivity with correlation coefficient of 0.76, between participation and productivity 0.71, investment and productivity 0.85, and between motivation and productivity 0.83. It has been suggested that attention should be paid to emotional and physical needs of workforce and try to find out the personnel motivation and by stimulating and satisfying the motivations consciously make them work harder.

Shadmehr [13] in an article titled an introduction to overall effectiveness factor of net workforce and its application in net management indicates that the management of repairs and maintenance can achieve high productivity in an organization by using the index of OCE. And as much the emphasis on equipments can have concentration and planning on net workforce and get acceptable results. This article investigates the effect of improvement productivity factors on net workforce by using efficiency, effectiveness, Quality of staff service. That indicates significant effect of these factors on increasing the productivity of net staff. Shadmehr expresses the effects of improvement clearly and completely by using the calculation and analysis of these components.

**Methodology:**

The present study by its nature and purpose is applied article. Specific feature of the applied researches is performance testing of scientific theories in a special area [11]. Moreover, from the perspective of data gathering and data analysis is a cross-correlation one.

**Statistical population and sample:**

The examined statistical population consists of all governmental staff of repair and maintenance department of oil and Gas Company in Gachsaran who have been working in 1390. The total staff of 600 personnel in area covered by Oil and Gas Company have been scattered in Gachsaran and areas around it. For determining the number of sample, Morgan table (1970) has been used. Regarding the size of statistical population, the minimum size of sample is 234 based on this scale. It should be noted that 250 questionnaires were distributed that among them only 225 questionnaires were returned.

**Method and data gathering instrument:**

In this research, the researcher for providing the secondary data, articles, magazines related to the topic of study have been used. The main data have been gathered through distributing questionnaires and collecting two questionnaires with topics of organizational challenges and staff productivity of repairs and maintenance department. The questionnaires on organizational challenges include 32 questions based on Likert scale. Respectively these questions are related with organizational challenge components:

- Questions 1 to 8: structural problems
- Questions 9 to 18: man power issues
- Questions 19 to 25: equipment barriers
- Questions 26 to 32: outsourcing problems

This questionnaire consists of 21 questions with Likert range. These questions respectively are related with three components of man force productivity:

- Questions 1 to 7: man force efficiency
- Questions 8 to 14: man power effectiveness
- Questions 15 to 21: the quality of staff services

Assessment tools of researcher should have validity. thus, the tools of primary questionnaires by using articles and books including standard questionnaires of maintenance and repair management that for evaluating the current situation of maintenance and repair productivity have been used. And the questionnaire of net organizational challenges that has been designed and developed by the Executive Secretariat of the Fourth Annual Conference of the International Technical Managers and the questionnaires were prepared based on consulting the advisors, consultants and company experts.

After designing the initial testing performance, 30 people were distributed for examining the employees’ opinion on questions and finding out the weaknesses of questionnaire. At last after involvement of employees’ and professionals’ corrective feedback and based on final approval of advisors and consultants of questionnaires, face validity has been. The final version of questionnaire has been designed and distributed among the employees. So it can be concluded that there is a credit in agreement between conceptual definition and operational definition.

To check the reliability of this research, 20 questionnaires have been distributed among experts and professionals of net maintenance and repair unit and has been calculated based on SPSS software and Cronbach’s alpha. This calculation number for questionnaires of organizational challenges is 0.83 and for the questionnaire of staff productivity is 0.89.
The methods of data analysis:

In present study, the data have been collected and entered into software SPSS after filling the questionnaires by the respondents. After investigating the relationships of variables of correlation (correlation coefficient) between variables were used. And because the investigated variables were parametric (interval), the Pearson correlation coefficient has been used.

Findings of research:

Before presenting the related results of each question, it should be mentioned that Pearson correlation coefficient was used to examine the relationship between variables. In the answer of each questions, two numbers can be found: Pc is Pearson correlation coefficient that is between range of 1 and -1. If the PC is positive, there is a direct relation between two variables and if it was negative, the relation is inverse. PV represents the significant correlation, in a way that if PV value is lower than 0.05, there is a significant relation at confidence level of 95%. If the PV value is lower than 0.01, the relation is significant at confidence level of 99%. If the PV is higher than 0.05, no significant relation can be found.

The relationships between structural problems and productivity components of workforce

Table 1: Pearson correlation coefficient between component of structural problems and each component of workforce productivity.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Staff efficiency</th>
<th>Staff effectiveness</th>
<th>Service quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PC</td>
<td>PV</td>
<td>PC</td>
</tr>
<tr>
<td>Structural problems</td>
<td>-0.402</td>
<td>0.001</td>
<td>-0.501</td>
</tr>
</tbody>
</table>

As it has been observed in table 1, the PC of all relations are negative and their PV is lower than 0.01. Therefore, the relation between structural problems and each of net productivity of work force is significant and inverse at 99% level. It means, by increasing the structural problems, each of productivity component of work force will be decreased.

The relationship between man power and labor productivity components

Table 2: The Pearson correlation coefficient between man power and each of staff productivity component.

<table>
<thead>
<tr>
<th>variables</th>
<th>Work force efficiency</th>
<th>Work force effectiveness</th>
<th>Service quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PC</td>
<td>PV</td>
<td>PC</td>
</tr>
<tr>
<td>Man power issues</td>
<td>-0.660</td>
<td>0.000</td>
<td>-0.664</td>
</tr>
</tbody>
</table>

In accordance table number 2, it can be found out that the relationship between man power issues and each of labor productivity components is significant and inverse at level 99%. Since in these relations PC is negative and PV is close to zero, increasing the man power issues will reduce all dimensions of work force productivity.

The relationships between equipment barriers and labor productivity components

Table 3: Pearson correlation coefficient between component of equipment barriers and each of labor productivity components.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Staff efficiency</th>
<th>Work force effectiveness</th>
<th>Service quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PC</td>
<td>PV</td>
<td>PC</td>
</tr>
<tr>
<td>Equipment barriers</td>
<td>-0.733</td>
<td>0.000</td>
<td>-0.729</td>
</tr>
</tbody>
</table>

As it has been specified in table number 3, PC of all relations are negative and their PV is lower than 0.01. Therefore, the relation between the component of equipment barriers and each of work force productivity components is significant and inverse at level 99%. In another words, by increasing the equipment barriers each component of work force productivity will be reduced.

The relation between outsourcing problems and labor productivity components

Table 4: Pearson correlation coefficient between component of outsourcing problems and each of labor productivity component.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Staff efficiency</th>
<th>Labor effectiveness</th>
<th>Service quality</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PC</td>
<td>PV</td>
<td>PC</td>
</tr>
<tr>
<td>Outsourcing problems</td>
<td>-0.738</td>
<td>0.000</td>
<td>-0.723</td>
</tr>
</tbody>
</table>

Based on table number 4, it has been clarified the PC of all relations are negative and their PV is lower than 0.01. Thus, the relation between equipment barriers and each of work force productivity components is significant and inverse at level 99%. It can be said that increasing the equipment barriers will result in decreasing each of work force productivity component.

Conclusion:

Regarding the significant and inverse relation between each component of organizational challenges and labor productivity component of repair and maintenance department (efficiency, effectiveness, quality of service), it can be concluded that increasing the dimensions of organizational challenges have led into reduction of staff productivity of net department. There is a significant and inverse correlation between organizational
problems and staff productivity of net unit, it means that by increasing the structural problems the labor productivity will decrease.

It seems that some special factors caused a dramatic increase in structural problems and have tangible impact on reduction of employees’ productivity in repair and maintenance unit. These factors include lack of model based on internet-oriented structure of this unit regarding the current situations that production-oriented structure (net-decentralized) have, senior management perspective to this unit as inferior unit in comparison with operation and production unit, not considering any merits and advantages for staff due to handling and involving with hard, dirty and dangerous activities, mismatch and inefficient of financial system and budget allocation payment mechanism, compensation and

There is a significant and inverse relationship between the man power issues and net labor productivity. In another word, increase in man power issues has led into reduction of net staff productivity. As it has been observed based on evidence, issues such as the middle- level and senior managers neglecting the differences of job nature and sensitivities of job and employees in net department in comparison with staff of other departments such as services and production and not using improvement motivational tools and satisfaction considered as the main indicator of human resource productivity improvement and the result of this continuing ignoring is presentation of lack of motivation, job dissatisfaction and consequently their leaving the organization and transferring significant numbers of staff to other offices.

In the following the attitudes and behavior of officials, including the style and methods of supervision authoritarian and autocratic and as a result staff dissatisfaction of the general career promotion and advancement in terms of official status, lack of sufficient support and attention to the needs of employees, Ready to serve and work to resolve the problems, Rebooting technical systems outside the official hours and even weekly and official holidays, lack of proper and efficient use of leisure time with family and stress related with actual and potential events concerns for workers and their families, expressing dissatisfaction with the current process of merit and evaluation system and expressing complained of educational system, the increasingly irrelevant or ineffective training courses keep up appearances or passing the upgrade path of staff not in terms of content, regarding the modern and technologies and up-to-date equipment which the majority of staff deal with, wide and extensive using and repairing of those equipments becomes gradually essential for factories, In total, these problems led to intensified turmoil, resulting in an adverse impact on employees' performances and maybe the range and severity of these problems may cause human issues in size large and tangible impact in reducing the maintenance staff productivity in the discussed hypothesis.

The inverse and significant relationship between the equipment barriers and maintenance and repair work force productivity represent that increasing the problems and failures related to equipments have negative and inverse effect on net staff performance. It seems that some factors such as time consuming of order cycle and purchasing related with process of providing equipment and spare, consumable items have led into increased costs associated with inventory control issue (orders, purchasing, warehousing, etc.).

Moreover, non-equivalent of staff in net department with people in charge of ordering and purchasing goods technically would cause imposing costs to the systems by long cycling and reworking. Lack of use of modern tools and up-to-date equipments as well as providing and purchasing tools ad equipments by the producers and sellers with low or discredited and not considering the staff needs and recommendations while planning, making and establishing new projects and buildings and other accessories and related equipments and not training or having proper skills for handling with this number of equipments and modern and up-to-date tools, dealing with financial problems(budget, credit) for providing goods and equipments especially with high cost in the case of need, especially in the last months of year based on short term of financial year in this department which becomes a usual affair and totally this kind of chaos would make the equipment barriers appeared intensively and make the inverse effect on work force productivity in repair and maintenance department.

The relationships between outsourcing problems and staff productivity of net department is significant and inverse. It means that increase in outsourcing problems has led into reduction of staff productivity. As it has been specified, some issues including lack of contractors’ familiarity with basics of net and lack of proper investment carefulness considered by them to carry out the tasks and activities assigned by the employer (net department) and Assignment of activities to contractors with the lowest rate or regarding the bids as the criteria and lack of proper attention to skills and their experiences, expertise and involving the relations, ethical and political relation, .... and contractors who not have commitment, and high responsibility for the mission and goals of the organization and enforce appropriate penalties and fines and legal in dealing with delinquent contractors (catches and lawlessness) for compensation and legal power and authority taking lessons for others and little control over the performance of contractors, employees and supervisors such as cause to increase the outsourcing problems significantly in net department and afterwards, serious damage to facilities and equipment, and reduction of their useful life, and devastating consequences of the impact of reduced productivity.
REFERENCES